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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,607	02/10/2004	Shinya Nakai	118622	1677

25944 7590 01/17/2007  
OLIFF & BERRIDGE, PLC  
P.O. BOX 19928  
ALEXANDRIA, VA 22320

EXAMINER
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TRAN, TUAN A

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/774,607	NAKAI, SHINYA	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tuan A. Tran	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1-4 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 15 and 20 of copending Application No. 10/774,606.

Regarding claims 1-4, claims 15 and 20 of copending Application No. 10/774,606 correspond to claims 1-4 of the instant application except the first separating means incorporates filters for separating frequency bands by passing one frequency band and blocking the other frequency band. Since diplexer (first separating means) is widely known in the art to comprise filters such as low pass filter (LPF) and high pass filter (HPF) for separating frequency bands by pass one frequency band and blocking the

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other frequency band; therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the first separating means with filters for the advantage of expanding the capability of the system to various types of electronic components.

This is a provisional obviousness-type double patenting rejection.

2. Claims 1-4 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4 and 6 of copending Application No. 10/545,270. Although the conflicting claims are not identical, they are not patentably distinct from each other because 1, 4 and 6 of copending Application No. 10/545,270 disclose similar claimed subject matters as specified in claims 1-4 of the instant application with various wordings.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atarius et al. (6,920,324) in view of Yamakawa et al. (6,985,712).

Regarding claim 1, Atarius discloses a front end module for processing transmission signals and reception signals in each of a first frequency band and a second frequency band (See figs. 4-5), the front end module comprising: a first separating means 54 (diplexer) connected to an antenna and separating the first and second frequency bands from each other; a second separating means 56 (duplexer) connected to the diplexer 54 and separating the transmission signals and the reception signals in the first frequency band from each other; and the third separating means 58 (duplexer) connected to the diplexer 54 and separating the transmission signals and the reception signals in the second frequency band from each other (See figs. 4-5).

However, Atarius does not mention that the second separating means includes two acoustic wave elements each of which functions as a filter, the third separating means includes two acoustic wave elements each of which function as a filter, and a single multi-layer substrate for integrating the first to the third separating means, wherein the first separating means is made up of a conductor layer located inside or on a surface of the multi-layer substrate. Yamakawa teaches a front end module (antenna switch) being integrated into a single multi-layer substrate 101 (See fig. 8), the module comprises diplexer 303 and duplexer 308 for separating frequency bands and transmission signals and reception signals in each band from each other (See fig. 6), wherein the duplexer 308 includes two acoustic wave elements 411, 414 each of which functions as a filter (See fig. 7 and col. 7 lines 29-45) and wherein the diplexer is made up of a conductor layer located inside or on a surface of the multi-layer substrate 101 (See figs. 7-8 and col. 7 line 47 to col. 8 line 21, col. 10 lines 15-20). Since Atarius does

suggest that the module can be embodied in integrated circuits; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teachings of Yamakawa in integrating the front end module as disclosed by Atarius into a single multi-layer substrate with modified diplexer and duplexers as disclosed by Yamakawa, for the advantage of providing effective space-saving by sharing the same space for plurality of electronic components in order to produce a more compact size of communication device as well as giving designer more flexibility in circuit designs.

Regarding claim 2, Atarius & Yamakawa discloses as cited in claim 1. Yamakawa further discloses the two acoustic wave elements 411, 414 of the diplexer are mounted on the multi-layer substrate 101 (See figs. 7-8 and col. 9 line 59 to col. 10 line 9); and at least part of circuit portions of the diplexer except the acoustic wave elements 411, 414 (e.g. transmission lines 409, 410) is made up of the conductor layer located inside or on the surface of the multi-layer substrate 101 (See figs. 7-8 and col. 7 lines 47-60).

Regarding claim 3, Atarius & Yamakawa discloses as cited in claim 1. Since Yamakawa further discloses the diplexer incorporates a filter for allowing signals of frequencies in the first frequency band to pass through and intercepting signals of frequencies in the second frequency band; and a filter for allowing signals of frequencies in the second frequency band to pass through and intercepting signals of frequencies in the first frequency band (See col. 9 lines 6-13); therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

further apply the teaching of Yamakawa in configuring the diplexer with filters for separating frequency bands for the advantage of expanding the capability of the system to various types of electronic components.

Regarding claim 4, Atarius & Yamakawa discloses as cited in claim 1. Atarius further discloses the transmission signals and the reception signals in each the first and second frequency bands are signals of a CDMA system (See fig. 4 and col. 3 line 65 to col. 4 line 4).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Kemmochi (6,987,984, 7,130,655); Hiraka (6,366,564); Watanabe (6,633,748); Hikita (6,766,149); Nakamichi (6,476,695); Hase (6,753,604); Uriu (2003/0092397).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Tran whose telephone number is (571) 272-7858. The examiner can normally be reached on Mon-Fri, 10:00AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tuan Tran  
AU 2618